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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,240	06/05/2006	Miklos Illyes	ILLYES ET AL 2 PCT	4000
25880 7590 06/25/2008 COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576				
EXAMINER SAIDI, AZADEH				
ART UNIT 3735		PAPER NUMBER		
MAIL DATE 06/25/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/596,240

Applicant(s)

ILLYES ET AL.

Examiner

Anita Saidi

Art Unit

3735

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is responsive to Applicant's arguments filed on 30 May 2008.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Currently claims 1-8 and 10-12 are pending.

Response to Arguments

3. Applicant's arguments, see page 5, lines 14-20 and page 6, line 11-page 10, filed on 30 May 2008, with respect to the rejection(s) of claim(s) 1-8 and 10-12 under US 6,702,754 to Ogura et al (Ogura '754) under US 5,680,870 to Hood Jr. et al (Hereinafter "Hood"), US 5,054,493 to Cohn et al (Hereinafter "Cohn") and US 7,029,449 to Ogura (Hereinafter "Ogura '449") have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found art and the amended claims filed on 21 December 2007.

Examiner finds the arguments directed to use of references Ogura '754, Ogura '499 and Cohn persuasive, however examiner respectfully disagrees with the following arguments:

Applicant argues that the Hood reference suggests teaching of eliminating analog signal separation unit in order to simplify both the hardware and software (applicant points to Column 3, lines 40-61 of Hood). The paragraph cited is directed to the prior art references described in the Hood reference and is not part of the Hood

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invention (See description for Figs. 1-3 in Col. 4, lines 35-50 of Hood). Hood teaches applying a dither signal to the pressure signals and converting then removing the dither signal in order to produce high resolution signals (Col. 5, lines 52-68 of Hood). The summing characteristic of the FIR filter (504 of Hood) may also serve as one section of a low pass filter (R-C filter) for separating the AC from DC components (Col. 6, lines 20-25 of Hood).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 7,326,180 to Tanabe et al (Hereinafter "Tanabe") in view of US 5,680,870 to Hood Jr. et al (Hereinafter "Hood") and US 5,241,966 to Finkelstein et al (Hereinafter "Finkelstein").

In reference to claims 1-3, 5 and 10 and 12:

Tanabe teaches:

A pulse wave monitoring device and method of use. The device comprises a pressure cuff (8 of Tanabe) that is wrapped around the subject's wrist. A sensor unit (13 of Tanabe) functions as a pulse wave detector unit (Col. 7, lines 35-44 of Tanabe). When the

sensor (6 of Tanabe) is pressurized against the subject's wrist the output data acquired is amplified (amplifier 5 of Tanabe) and converted into a digital signal (A/D converter 51 of Tanabe) and stored in the memory (memory card 2 and memory 11 of Tanabe) to be accessed by CPU (10 of Tanabe) which controls and monitors the pressurization and calculation of pressure values as well as calculation of an AI (Augmentation Index) and the ejection time (ΔT_p). The AI (Col. 8, lines 2-13 of Tanabe) ejection time (Col. 54-67 of Tanabe) and blood pressure values are displayed on the monitor (Fig. 8 of Tanabe). The SYS (systolic), DIA (Diastolic) and heart rate values will be determined and displayed on the screen (Fig. 8, Col. 9, lines 35-41 of Tanabe). The blood pressure monitor and the pulse wave characteristic parameter computation section (10A of Tanabe) which computes the AI and ejection time are all connected to the CPU (10 of Tanabe).

However Tanabe fails to teach that:

The system comprises an oscillation wave separating and storing signal detector with a sampling rate of at least 200/heart cycle or 180-220/second. The memory has at least 9 bit resolution or 10-12 bit. A digital anti-filter is used to compensate the distortions rising at the sampling, separating and digitizing the oscillation wave.

Hood teaches:

An oscillometric blood pressure monitor which digitizes the collected data and, by adding a dither signal (anti-filtering the collected signals), will increase the signal resolution Col. 5, lines 42-68 and Col. 6, lines 20-25 of Hood). The output of the pressure transducer, the preamplifier (300 of Hood), and the dither signal from the oscillator (502 of Hood), are input to an adder (500 of Hood). The sum of these signals is then digitized by a converter (302 of Hood). An A/D converter (400 of Hood) with a resolution of 14-20 bit is used to save and digitize the signals, and the oscillation complexes and static pressure signals are then separated and processed by pulse separation software (402 of Hood).

It would have been obvious to one having ordinary skill in the art at the time the applicant's invention was made to have used anti-filter and electronic systems, such as data storage with a 9 bit resolution similar to that taught by Hood in the pulse wave monitoring device and method of Tanabe in order to store data and increase the signal resolution.

However, the combination fails to teach that the:

The sampling rate is 200/heart cycle or 180-220/seconds.

Finkelstein teaches:

A method and apparatus for measuring cardiac output which comprises a pressure transducer (34 of Finkelstein) that is wrapped around a subject's finger and will pressurize the finger in order to

monitor the subject's pulse wave (Col. 24-40 of Finkelstein).

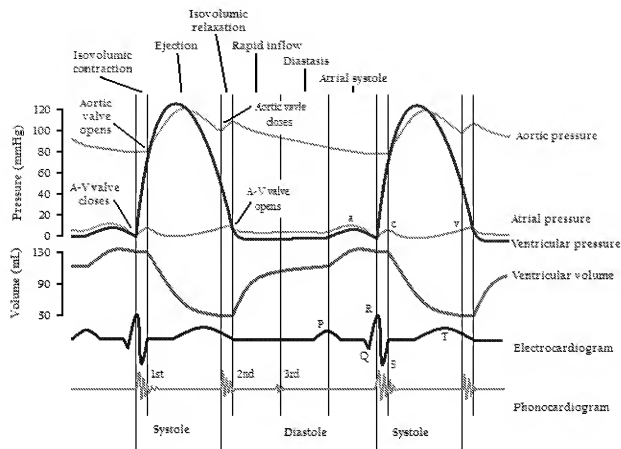
An A/D converter (12 of Finkelstein) is used for sampling the pulse wave signals and a microprocessor (14 of Finkelstein) is used for analyzing the collected data. The A/D has a 200 samples/second resolution which is satisfactory to capture the highest frequency components of interest in the pressure pulse (Col. 3, lines 64-68 of Finkelstein).

It would have been obvious to one having ordinary skill in the art at the time the applicant's invention was made to have used an A/D converter with 200 samples/second sampling resolution, similar to the one taught by Finkelstein, in the pulse wave monitor of Tanabe, as modified by Hood, in order to capture the highest frequency components of interest in the pressure pulse signal.

In reference to claim 11:

The cuff is set at a previously determined diastolic value (Col. 7, lines 1-5 of Hood). The received heart cycle curve is divided into two parts with the ED end-point, to constitute Systole Area Index (SAI) and Diastole Area Index (DAI) values (Fig. 8 of Tanabe).

The ejection time will separate the cardiac cycle into systole and diastole areas. This is shown in the figure below.



http://en.wikipedia.org/wiki/Cardiac_cycle

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe in view of Hood and Finkelstein as applied to claim 1 above, and further in view of US 6,994,675 to Sharrock (Hereinafter "Sharrock").

In reference to claim 4:

Tanabe, as modified by Hood and Finkelstein, teaches all of the claim

limitations; see the rejection of claim 1 above.

However, the combination fails to teach:

A time-arithmetic unit establishing a Pulse Wave Velocity (PWV), or
an integrator unit establishing a Systole Area Index (SAI) and
Diastole Area Index (DAI).

Sharrock teaches:

A non-invasive measurement of suprasystolic signals, which
comprises a pressure cuff (10 of Sharrock) which is pressurized
above the systolic pressure (40 mmHG, Col. 3, lines 30-42 of
Sharrock). The pulse wave signal is monitored and the pulse wave
velocity is determined (Col. 8, line 65-Col. 9, line 8 and Col. 10,
lines 4-5 of Sharrock), in order to determine the arterial compliance
of the subject.

It would have been obvious to one having ordinary skill in the art at the
time the applicant's invention was made to have provided a pulse wave
velocity monitor similar to the one taught by Sharrock in the pulse wave
monitor and method of Tanabe, as modified by Hood and Finkelstein, in
order to detect arteriosclerosis.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Tanabe in view of Hood and Finkelstein as applied to claim 1 above, and further in view
of US 6,398,727 to Bui et al (Hereinafter "Bui").

In reference to claims 6 and 7:

Tanabe, as modified by Hood and Finkelstein, teaches all of the claim limitations; see the rejection of claim 1 above.

However, the combination fails to teach that:

The apparatus is a portable, 24h ambulatory blood pressure monitor which comprises a telemedical home care system.

Bui teaches:

A patient home management system which comprises a portable 24h ambulatory (Col. 26, lines 64-68 of Bui) unit for monitoring and recording a plurality of physiological conditions of a patient (Figs. 1 and 2 of Bui), which comprises multiple sensors for monitoring blood pressure (54 of Bui) and ECG (217 of Bui) of a subject and transmitting the collected data to a health care provider (Col. 6, lines 14-55 of Bui).

It would have been obvious to one having ordinary skill in the art at the time the applicant's invention was made to have used a 24h ambulatory unit similar to the one taught by Bui in the pulse wave monitor and method of Tanabe, as modified by Hood and Finkelstein, in order to provide a continuous monitoring of physiological conditions of an ambulatory patient.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe in view of Hood and Finkelstein as applied to claim 1 above, and further in view of US 5,238,001 to Gallant et al (Hereinafter "Gallant").

In reference to claim 8:

Tanabe, as modified by Hood and Finkelstein teaches all of the claim limitations; see the rejection of claim 1 above.

However, combination fails to teach that:

The apparatus comprises a 24h blood pressure monitor, which is controlled by a built-in ECG.

Gallant teaches:

An ambulatory patient monitoring system (100 of Gallant), which comprises an ECG monitoring unit (110 of Gallant) which triggers a blood pressure monitoring module (210 of Gallant) when an abnormality is detected (Col. 3, lines 4-22 of Gallant).

It would have been obvious to one having ordinary skill in the art at the time the applicant's invention was made to have used an ECG monitoring unit in conjunction with a blood pressure monitor as taught by Gallant in the pulse wave monitor and method of Tanabe, as modified by Hood and Finkelstein, in order to monitor the blood pressure when an abnormal heart rate occurs so that the health care provider could monitor the heart activity as well as the blood pressure measured during those incidents.

Conclusion

8. Applicant's amendment of December 21, 2007 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita Saidi whose telephone number is (571)270-3001. The examiner can normally be reached on Monday-Friday 9:30 am - 6:00 pm Est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, II can be reached on 571-272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles A. Marmor, II/
Supervisory Patent Examiner
Art Unit 3735

/A. S./
Examiner, Art Unit 3735
6/26/2008